

Remarks

In the non-final Office Action dated December 29, 2009, claims 22-25, 29, 35, 43, 46, 54-56, and 63-67 were rejected under Section 102(b) as being anticipated by U.S. Patent No. 6,684,879 to Coffee et al.; claims 26, 27, 37, 60 and 62 were rejected under Section 103 based on the '879 patent; claims 28, 36, 49-53, 64 and 65 were rejected under Section 103 based on the '879 patent in view of U.S. Patent No. 5,655,517 to Coffee; claim 57 was rejected under Section 103 based on the '879 patent in view of U.S. Patent No. 4,095,596 to Grayson; and claims 58, 59 and 61 were rejected under Section 103 based on the '879 patent in view of U.S. Patent No. 6,602,475 to Chiao.

During a telephone call with Examiner Hogan on January 28th, he stated that the Section 102 rejections of claims 22-25, 29, 35, 43, 46, 54-56 and 63-67 would be withdrawn. During a separate call with Supervisory Primary Examiner Tran, he promised that either he or Examiner Hogan would telephone Mr. Showalter to discuss possible amendments to the claims to place the case in condition for allowance after a reply to the December 29th Office Action is filed.

Claim 22 in the present application recites:

An aroma dispensing device, comprising:
means for supplying liquid to an electrically conductive outlet;
an electrical discharge means;

means for coupling said outlet to a first potential and for coupling said electrical discharge means to a second, different, potential for causing an electric field to be generated at said outlet to produce a dispersion of aroma-providing droplets from liquid issuing from the outlet and for producing at said electrical discharge means ions to at least partially electrically discharge the dispersion, wherein said outlet is coupled to said first potential via a resistance.

Independent claim 25 recites:

An aroma dispensing device, comprising:
means for supplying liquid to an outlet;
an electrical discharge means;

means for coupling said outlet to a first potential representing electrical earth and said electrical discharge means to a second, different potential for causing an electric field to be generated at said outlet to generate a dispersion of aroma-providing droplets using liquid issuing from the outlet and for producing at said electrical discharge means ions to at least partially

electrically discharge the dispersion, wherein said outlet is coupled to said first potential via a resistance.

The Office Action states on page 3:

wherein said one of said outlet and said electrical discharge means is coupled to said first potential via a resistance (col. 2, lines 55- col. 3, line 2), the coating of the electrode being what supplies the resistance.

U.S. Patent No. 6,684,879 to Coffee et al. teaches in column 2, line 46 through column 3, line 2:

In one aspect, the present invention provides an inhaler having means for supplying liquid to an outlet and means for subjecting liquid issuing from the outlet to an electrical field sufficient to cause comminution of liquid issuing from the outlet, and means for generating an electrical potential at the one of the first and second electrodes most remote from the liquid outlet, said means for generating the electrical potential comprising means for generating an ion current for indirectly charging said one electrode.

In this aspect, the ion current generating means may comprise a further electrode located adjacent the one electrode and means for providing a high resistance path to earth from said one electrode. The high resistance path to earth may be provided by an actual resistor in series with said one electrode or, for example, a resistive or semiconductive coating on said one electrode. Indirect charging of said one electrode reduces the possibility of deposition of comminuted matter onto said one electrode because any electrically charged comminuted matter which approaches said one electrode will be at least partially electrically discharged by the generated ions. Furthermore, a more even deposition or greater penetration within the nasal passages should be achieved because of the at least partial discharge of some of the comminuted matter by the ion generating means.

Thus, Coffee et al. teach “means for providing a high resistance path to earth from said one electrode,” wherein the one electrode is “most remote from the liquid outlet.” Hence, the one electrode, which is associated with a high resistance path to earth, is most remote from the liquid outlet. As a result, the liquid outlet is not coupled to a first potential via a resistance but, instead, the one electrode most remote from the outlet is coupled to the first potential via a resistance.

The discussion found at column 2, line 46 through column 3, line 2 of the Coffee et al. patent is consistent with the embodiments illustrated in Fig. 6 of the Coffee et al. patent.

In the Fig. 6 embodiment of the Coffee et al. patent, a counter electrode 12' is mounted to an inner wall of a chamber and is coupled via a resistor to the negative terminal of a voltage source, see column 7, lines 45-53. A further electrode 120 is mounted so as to be near the counter electrode 12' and is coupled to the high voltage output of a high voltage generator, see column 7, lines 54-62. A first electrode 11 is provided in the liquid supply pipe and is coupled to the negative terminal of the battery, see column 5, lines 19-21. In this embodiment, ions are generated from the electrode 120 and migrate to the counter electrode 12', see column 7, lines 63-67. Hence, the counter electrode 12' is indirectly charged to a desired electrical potential, see column 8, lines 2-4. The pipe 10 is "made of an insulating material which does not retain charge for any significant length of time," see column 5, lines 12-15. **Hence, the outlet of the pipe 10 is not coupled to a first potential via a resistance. Instead, the counter electrode 12' is coupled to a negative terminal of a voltage source via a resistor.**

In the Fig. 6 embodiment of the Coffee et al. patent, it is believed that the voltage applied to the electrode 120 must be limited because if the voltage is too high, it is believed that ion flux from the electrode 120 to the outlet nozzle 10a will be too excessive, which may cause disruption of the comminution of the liquid. This is in contrast to the present invention, where a resistor is provided between an electrically conducting outlet of a supplying means and a first potential. As discussed in paragraph 39 of corresponding U.S. Patent Application Publication No. 2006/0261179 A1, providing a resistor between an outlet of a supplying means, such as capillary tube 7 in Fig. 1, and a first potential, such as electrical earth E, the discharge voltage and consequently the ion flux can be increased so as "to generate more ions which helps to ensure that all of the electrically charged dispersion is electrically discharged" without disrupting the comminution of the liquid.

None of U.S. Patent No. 6,684,879 to Coffee et al.; U.S. Patent No. 5,655,517 to Coffee; U.S. Patent No. 4,095,596 to Grayson; or U.S. Patent No. 6,602,475 to Chiao disclose an electrically conductive outlet coupled to a first potential via a resistance. Accordingly, claims 22-29, 35-37, 43, 46 and 49-67 defines patentably over the applied prior art.

In view of the above remarks, applicants submit that claims 22-29, 35-37, 43, 46 and 49-67 define patentably over the prior art. Early notification of allowable subject matter is respectfully requested.

Respectfully submitted,
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